Frontiers of Mathematics Lecture
p-adic L-functions and modifying factors

Abstract

The Riemann zeta function $\zeta(s)$ takes rational values at negative odd integers, and the Kummer congruence relations assert that these values satisfy congruences enabling them to be interpolated continuously in the p-adic topology. The p-adic L-function of Kubota-Leopoldt serves as the p-adic analog of the Riemann zeta function, incorporating the Kummer congruence relations. Coates conjectured that there exist p-adic L-functions attached to motives or algebraic automorphic representations, which interpolate the critical values of complex L-functions with explicit modifying factors at infinity and at p. Starting with basic notions on p-adic L-functions, we will discuss Coates' conjecture in the setting of automorphic representations. We verify it for symplectic-type representations. The talk is based on a joint work with Dongwen Liu.

Biography

Binyong Sun earned his bachelor's degree from Zhejiang University and his Ph.D. from the Hong Kong University of Science and Technology. He began working at the Academy of Mathematics and Systems Science, Chinese Academy of Sciences in 2005 and has been affiliated with Zhejiang University since 2020. His main research interests are representation theory and automorphic forms, especially, infinite-dimensional representations of classical groups. His accolades include the Tan Kah Kee Young Scientist Awards, China Outstanding Young Scientist Award, Second Prize of the National Natural Science Award, and the Future Science Prize in Mathematics and Computer Science. In 2019, he was elected as an academician of the Chinese Academy of Sciences.

Professor Binyong Sun
*Institute for Advanced Study in Mathematics &
New Cornerstone Science Laboratory,
Zhejiang University*

Date :
May 8, 2025 (Thursday)

Time :
3:00 – 4:00 pm
(Tea Reception starts at 2:30 pm)

Venue :
Lecture Theatre A, 1/F,
Chow Yei Ching Building,
The University of Hong Kong

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